(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 30 September 2004 (30.09.2004)

PCT

(10) International Publication Number WO 2004/083594 A3

(51) International Patent Classification7: 43/10

E21B 23/00,

(21) International Application Number:

PCT/US2004/008171

(22) International Filing Date: 15 March 2004 (15.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/454,896

14 March 2003 (14.03.2003) US

(71) Applicant (for all designated States except US): ENVENTURE GLOBAL TECHNOLOGY [US/US]; 16200 A Park Row, Houston, TX 77084 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SHUSTER, Mark

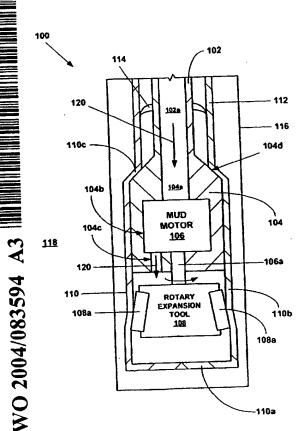
[US/US]; 19115 Prospect Ridge Lane, Houston, TX 77094 (US). COSTA, Scott [US/US]; 2011 Willow Point, Kingwood, TX 77330 (US).

- (74) Agent: MATTINGLY, Todd; Haynes and Boone, LLP, 901 Main Street, Suite 3100, Dallas, TX 75202 (US).
- (81) Designated States (unless otherwise indicated. for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES. FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

CHARLEST CONTRACTOR

(54) Title: APPARATUS AND METHOD RADIALLY EXPANDING A WELLBORE CASING USING AN EXPANSION MANDREL AND A ROTARY EXPANSION TOOL



(57) Abstract: An apparatus and method for radially expanding a wellbore casing (112) using an expansion mandrel (104) and a rotary expansion tool (108).

Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Deciaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- (88) Date of publication of the international search report: 19 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/08171

	· · · · · · · · · · · · · · · · · · ·		• * * * * * * * * * * * * * * * * * * *
A. CLA IPC(7)	SSIFICATION OF SUBJECT MATTER E21B 23/00, 43/10		
US CL	: 166/380, 382, 207		
According to	o International Patent Classification (IPC) or to both nat	onal classification and IPC	
B. FIEL	DS SEARCHED		
Minimum de U.S. : 1	ocumentation searched (classification system followed b 66/380, 382, 207, 206	y classification symbols)	
Documentat	ion searched other than minimum documentation to the	extent that such documents are include	ed in the fields searched
Electronic d	ata base consulted during the international search (name	of data base and, where practicable, s	earch terms used)
C. DOC	UMENTS CONSIDERED TO BE RELEVANT		
Category •	Citation of document, with indication, where a		Relevant to claim No.
Х	US 3,785,193 A (KINLEY et al) 15 January 1974 (15	US 3,785,193 A (KINLEY et al) 15 January 1974 (15/01/1974), Figures 1-3.	
x	US 2.627,891 A (CLARK) 10 February 1953 (10/02/1953), Figures 1 and 4.		2, 4-6 and 8-15
A, P	US 6,543,552 A (METCALFE et al) 08 April 2003 (08/04/2003), Figures 1-7.		1-15
Α	US 3,818,734 A (BATEMAN) 25 June 1974 (25/06/1974), see Figure 1.		1-15
A	US 2003/0024711 A1 (SIMPSON et al) 06 February 2003 (06/02/2003), Figure 2		1-15
		,	
<u> </u>			
Furthe	er documents are listed in the continuation of Box C.	See patent family annex.	
•	Special categories of cited documents:		ne international filing date or priority application but cited to understand the
	ent defining the general state of the art which is not considered to be of	principle or theory underlying th	e invention
particular relevance "E" carlier application or patent published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination	
	ent referring to an oral disclosure, use, exhibition or other means	being obvious to a person skilled	f in the art
document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search		Date of mailing of the international search report 16 FEB 2005	
11 January 2005 (11.01.2005) Name and mailing address of the ISA/US		Authorized officer	
	fail Stop PCT, Attn: ISA/US	41/0	10
	ommissioner for Patents	Hoang Dang	e for
P.O. Box 1450 Alexandria, Virginia 22313-1450		Telephone No. 703-308-2168	$\boldsymbol{\nu}$
	ło. (703) 305-3230		

Form PCT/ISA/210 (second sheet) (January 2004)